

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS
FOR
LANGE TWINS FAMILY LIMITED dba
JAHANT WOODS CELLARS
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. Lange Twins Family Limited doing business as Jahant Woods Cellars (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 14 February 2006 for the treatment and disposal of winery wastewater. Additional information was submitted on 26 May 2006.
2. The Discharger is constructing a winery at 1525 E. Jahant Road, Acampo (Assessors Parcel No. 003-150-08) in Section 11, T4N, R6E, MDB&M. The location of the winery is presented on Attachment A, which is attached hereto and made part of this Order by reference.

BACKGROUND

3. Activities at the winery facility will include receiving, crushing, and pressing of grapes; fermentation; processing into finished wines; bottling; and distribution.
4. The winery is being constructed in phases with an anticipated 11,000 tons of grapes to be crushed in the first phase. It is anticipated that it will take ten years or more to reach the first phase maximum crush tonnage. At full crush capacity, the winery will produce approximately 2,000,000 gallons of must (unfermented grape juice) and approximately 12,500,000 gallons of wastewater. The winery site plan is presented on Attachment B, which is attached hereto and made part of this Order by reference.
5. During wine production, various chemicals can be used as either an additive, a fining agent, or as a cleaner/sanitizer. The approximate quantities of additives and chemicals used per year at this winery are as follows:

<u>Additives/Chemical</u>	<u>Quantity</u>	<u>Units</u>
Ozone	18	grams/minute
Soda Ash/Contact	1,200	Pounds
Citric Acid	707	Pounds
Liquid Chlorine/Chemclean/Sanibac	291	Pounds
Liquid Chlorine	36	Pounds
C-TSP	702	Pounds
Dolphin Water Treatment	Not specified	Not specified
Tartaric Acid	Not specified	Not specified
Diammonium Phosphate	Not specified	Not specified
Trisodium Phosphate	Not specified	Not specified

<u>Additives/Chemical</u>	<u>Quantity</u>	<u>Units</u>
Metabisulfate	Not specified	Not specified
Ammonium Hydroxide	Not specified	Not specified

6. The RWD states a recirculating ozone system will be used as the main sanitizing agent for the winery. It will employ an ozone generator that will supply ozone to a holding tank. Ozone will be distributed from the holding tank to the main processing areas and any unused ozone will be returned to the holding tank. Ozone degrades quickly and leaves no residual in solution.
7. Because process wastewater monitoring data for the Discharger's winery is not yet available, typical winery wastewater data are presented below. Constituent concentrations are the highest during the crush season, and are typically in the following ranges:

<u>Compound</u>	<u>Units</u>	<u>Crush Season Concentration Range (min-max)</u>	<u>Non-Crush Season Concentration Range (min-max)</u>
pH	pH units	2.5 – 9.5	3.5 - 11
Dissolved Oxygen	mg/L	0.5 – 8.5	1 - 10
Biochemical Oxygen Demand	mg/L	500 – 12,000	300 – 3,500
Chemical Oxygen Demand	mg/L	800 – 15,000	500 – 6,000
Grease	mg/L	5 – 30	5 - 50
Settleable Solids	mg/L	25 – 100	2 -100
Nonfilterable Residue	mg/L	40 – 800	10 - 400
Volatile Suspended Solids	mg/L	150 – 700	80 - 350
Total Dissolved Solids	mg/L	80 – 1,800	80 – 1,800
Nitrogen	mg/L	1 – 40	1 - 40
Nitrate (as Nitrate)	mg/L	0.5 – 4.8	NR
Phosphorous	mg/L	1 – 10	1 - 40
Sodium	mg/L	35 – 200	35 - 200
Alkalinity (CaCO ₃)	mg/L	40 – 730	10 - 730
Chloride	mg/L	3 – 250	3 - 250
Sulfate	mg/L	10 - 75	20 - 75

Wastewater concentrations and calculated values from Table 3, Report of Waste Discharge, Lange Twins Winery, Wallace Group, 14 February 2006.

8. The Discharger has reported that the bulk of the wastewater will be generated during harvest and for several weeks thereafter, and again during racking and barrel washing about two to three months after harvest. Bottling may occur at any time throughout the year.

WASTEWATER TREATMENT SYSTEM

9. Wastewater generated from winery processing activities (process/equipment cleaning, wash down operations, and bottling) is collected in floor drains, screened, pH adjusted, flow metered, biologically treated in ponds, stored in a storage pond, and then land applied. Each of the processes is further described below.
10. Screened grates will be installed on drains collecting wastewater at the crushing, bottling and barrel cleaning areas of the winery. Wastewater will be conveyed through piping by gravity to a lift station that will pump water through a fine screen. The fine screen will remove solids larger than 0.02 inch.
11. Ammonium hydroxide will be used for pH adjustment and will be fed into the waste stream using an automatic sensor, maintaining the pH influent to the treatment ponds between 6 and 7.
12. Biological treatment for removal of Biochemical Oxygen Demand (BOD) will occur in the treatment ponds. Two ponds with a total capacity of 1,340,000 gallons will be constructed. The ponds will be double lined with vinyl or equivalent liners equipped with a leak detection system. The treatment ponds will be equipped with up to 40 horsepower of floating mechanical aerators to provide surface aeration for oxygen demand and odor control. Wastewater constituent concentrations after biological treatment in the ponds is presented below:

<u>Compound</u>	<u>Units</u>	Reclaimed Water Concentration Range (min-max)	Reclaimed Water Concentration Range (average)
pH	pH units	6.5 – 9.5	7.9
Dissolved Oxygen	mg/L	1-10	6
Biochemical Oxygen Demand	mg/L	10-160	50
Chemical Oxygen Demand	mg/L	NR	90
Grease	mg/L	NR	0.2
Settleable Solids	mg/L	NR	0.2
Nonfilterable Residue	mg/L	NR	20
Volatile Suspended Solids	mg/L	NR	15
Total Dissolved Solids	mg/L	8-1500	900
Nitrogen	mg/L	NR	5
Nitrate (as Nitrate)	mg/L	0.1-40	1.5
Phosphorous	mg/L	NR	5
Sodium	mg/L	NR	100
Alkalinity (CaCO ₃)	mg/L	NR	40
Chloride	mg/L	2.5-210	50
Sulfate	mg/L	NR	25

Wastewater concentrations and calculated values from Table 3, Report of Waste Discharge, Lange Twins Winery, Wallace Group, 14 February 2006.

13. One storage pond will be constructed to provide a capacity of 870,000 gallons with two feet of freeboard. The pond will be double lined and equipped with a leak detection system. Surface aeration may be added to this pond for odor control if necessary. The water balance shows that the pond provides adequate storage for the 100-year annual rainfall without the need for irrigation disposal within 24-hours of a rainfall event. However, the wastewater system requires discharge of wastewater, year-round. The storage pond does not provide adequate storage to hold wastewater during the entire wet season (approximately November to March).
14. The 26 May 2006 RWD Addendum contains a water balance for the wastewater treatment, storage, and land application system. The water balance was based on an annual wastewater discharge of 11,220,000 gallons and 100-year annual return rainfall amounts. It did not include stormwater from the roof areas and paved parking areas.
15. Stormwater that falls on paved parking areas (approximately three acres) and roof areas (approximately one acre) will be discharged to an on-site stormwater storage pond. The stormwater pond location is presented on Attachment B.

LAND APPLICATION SYSTEM

16. Wastewater will be applied to land from the wastewater storage pond. Because the storage pond does not provide adequate storage capacity to hold all wastewater during the winter season, wastewater will be applied during the winter season. The wastewater storage pond will provide adequate short-term storage to allow land application when climatic and soil conditions permit.
17. The land application area consists of 28-acres planted in pasture, 40-acres planted in vineyard, and 64-acres planted in vineyard. The location of the land application areas are shown in Attachment C, which is attached hereto and made part of this Order by reference. The 28-acre land application area will be the primary land application area used during the winter months. Wastewater will be applied to the 40 and 64-acre land application areas during the remainder of the year. Crops will be harvested from the land application areas.
18. In order to prevent the potential off-site discharge of stormwater mixed with wastewater, this Order prohibits irrigation with wastewater 24 hours before, during, or 24 hours after a rain event, or when soils are saturated. The 28-acre land application area, which will receive the bulk of discharge during the wet season will be bermed to prevent stormwater/wastewater mixtures from discharging to surface water bodies.
19. Wastewater will be applied in the land application areas at different rates for the 28-acre land application area and the 104-acre (40 plus 64-acre) land application areas. Loading rates for the land application areas are discussed below:
 - a. In the 28-acre land application area, a total of 7,090,000 gallons of wastewater per year is anticipated to be applied. When evenly distributed across the 28-acre land area, that is equivalent to an application rate of 9.3 in/year.

- b. In the 104-acre land application areas, a total of 5,078,195 gallons of wastewater per year is anticipated to be applied. When evenly distributed across the 104-acre land area, that is equivalent to an application rate of 1.8 in/year

20. Wastewater will be applied by flood irrigation in the 28-acre land application area and by drip irrigation in the 40 and 64-acre land application areas. The crop irrigation needs exceed the amount of wastewater that will be applied on an annual basis; therefore, the land application areas will receive supplemental irrigation water. However, in some months, the applied wastewater exceeds the crop irrigation need. Table 6 of the 25 May 2006 RWD addendum includes a water balance that evaluates the assimilative capacity of the land application areas. Based on that evaluation, the land application areas possess sufficient assimilative capacity to absorb the applied wastewater and stormwater year round. The percent of the total assimilative capacity for the land application areas is presented below:

<u>Month</u>	28-acre LAA Assimilative Capacity (% of Total)	104-acre LAAs Assimilative Capacity (% of Total)
January	18.4	7.8
February	18.5	6.9
March	12.5	4.5
April	2.6	2.5
May	1.0	1.4
June	1.0	1.6
July	0.7	1.1
August	6.3	0.5
September	9.0	0.3
October	7.3	3.6
November	8.2	9.5
December	8.4	7.4

21. Loading rates for wastewater constituents were evaluated in the RWD. Because wastewater will be applied to the land application areas at different times of the year and with differing wastewater application rates, the RWD described the 28-acre land application area and 104-acre (40 plus 64-acre) land application areas separately. The loading rates are presented below:

- a. At the 28-acre land application area the following loading rates are anticipated:

<u>Constituent</u>	Daily Loading Rate (lbs/acre/day)	Yearly Loading Rate (lbs/acre/year)
Biochemical Oxygen Demand	0.07-0.88	155
Total Dissolved Solids	0.7-7.1	977
Total Nitrogen	0.01-0.07	10
Chloride	0.01-0.26	31

- b. At the 104-acre (40 plus 64-acre land application areas) the following loading rates are anticipated:

<u>Constituent</u>	Daily Loading Rate (lbs/acre/day)	Yearly Loading Rate (lbs/acre/year)
Biochemical Oxygen Demand	0.01-0.37	35
Total Dissolved Solids	0.10-1.78	289
Total Nitrogen	0.00-0.02	2
Chloride	0.00-0.10	11

22. Based on the loading rates presented in the RWD and summarized above, the following assumptions can be reached:
- The BOD loading rate is below the loading rate that typically causes objectionable odors and is unlikely to mobilize constituents in the subsurface. Applications of BOD at less than 100 lbs/ac•day generally do not cause nuisance conditions. However, individual applications must be managed to prevent overloading of the land application area.
 - The TDS loading rate may be above the crop uptake rate in the 28-acre land application area. The loading rate in the 104-acre land application areas is low enough so that groundwater quality degradation is unlikely. For the 28-acre land application area, the total dissolved solid loading rate is a concern; this Order requires preparation of a *Salinity Reduction Study* to evaluate means to reduce the dissolved solids loading of the land application area. It is also appropriate to have required the Discharger to install and continue monitoring groundwater monitoring wells, and if impacts are identified, to take steps to prevent groundwater degradation
 - The total nitrogen loading rate is below typical crop uptake rates and should not impact groundwater quality. Typical vineyards take up approximately of 125 lbs/ac•year
 - The chloride loading rate is low enough that groundwater degradation as a result of the discharge is unlikely.

SOLID WASTE

23. Solid/semi-solid wastes such as pomace (skins, seeds, pulp, stems, etc. resulting from the grape crush) and filter cake media (bentonite and diatomaceous earth) are also generated by the processing operations. Such solid/semi-solid wastes are segregated from the process wastewater stream by cleanup processes (sweeping materials from floor drains) or by screens in the floor drains. Solids will be placed in the land application area as fertilizer/soil amendment.

GROUNDWATER CONDITIONS

24. Process water at the facility is provided by a domestic supply well. The well depth is 660 feet below ground surface (bgs); the boring extended to a depth of 775 feet. The well is perforated from a depth of 260 to 660 feet bgs. The well was constructed with a cement annular seal from the

surface to a depth of 100 feet. The well location is presented on Attachment B. Water quality in the well was sampled on 16 January 2006. The water quality results were:

<u>Constituent</u>	<u>Units</u>	<u>Concentration</u>
Nitrate (as N)	mg/L	0.2
Total Dissolved Solids	mg/L	147
pH	Std. Unit	8.4
Calcium	mg/L	7.8
Magnesium	mg/L	5.3
Sodium	mg/L	35
Potassium	mg/L	2
Chloride	mg/L	15.7
Sulfate (as S)	mg/L	2.5
Boron	mg/L	0.1

ND denotes Not Detected, detection limit shown in parentheses.
 Data is from Appendix G, 14 February 2006 RWD.

25. Three groundwater monitoring wells exist at the facility. The wells were installed in March 2006, as part of preparation of the RWD. The well locations are presented on Attachment C. Groundwater exists approximately 50 feet below the ground surface. Groundwater flow direction is to the east-southeast. The wells were sampled on 20 March 2006 and 19 May 2006; a summary of groundwater quality is presented below:

<u>Constituent</u>	<u>Units</u>	<u>MW-1</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-3</u>
Sample Date	NA	3/20/06	5/19/06	3/20/06	5/19/06	3/20/06	5/19/06
Boron	mg/L	0.06	0.053	0.23	0.095	0.25	0.025
Iron	mg/L	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Total Alkalinity	mg/L	240	230	400	330	330	230
Calcium	mg/L	53	84	97	76	82	81
Chloride	mg/L	64	77	320	61	150	120
Electrical Conductivity	µmhos/cm	710	760	1,200	800	1,600	930
Potassium	mg/L	2.8	4.5	10	3.4	10	1.6
Magnesium	mg/L	29	49	58	39	44	37
Sodium	mg/L	34	42	130	51	110	38
Nitrate as Nitrogen	mg/L	6.3	12	0.5	1.6	1.3	1.7
PH	Std. Units	6.7	6.7	7.2	6.6	7	7.0
Total Dissolved Solids	mg/L	470	480	780	510	1,000	620
Hardness as CaCO ₃	mg/L	250	410	480	350	390	330
Sulfate	mg/L	20	25	53	16	39	29
Total Kjeldahl Nitrogen	mg/L	3.9	1.5	2.1	0.70	2	2.9

ND denotes Not Detected, detection limit in parentheses.

26. Based on the groundwater flow information collected in the sample events, Well MW-1 represents upgradient groundwater quality. In the 20 March 2006 sample event, the water quality in Well MW-1 was significantly better than in the down gradient wells. In the 19 May 2006 sample event,

the water quality in the up and downgradient wells was much closer. This situation will require further evaluation in a review of groundwater data to be performed when more data is available.

27. Because the 28-acre land application area will receive heavier loading than the other 104-acres of land application areas, groundwater monitoring is only required at the 28-acre land application area. If groundwater degradation is observed at the 28-acre land application area, additional monitoring may be required in the other land application areas.

SITE SPECIFIC CONDITIONS

28. The site topography relatively is flat. According to the Soil Survey of San Joaquin County, soils consist of San Joaquin Loam and Bruella Sandy Loam. Minimum infiltrations rates published in the Soil Survey are 0.06 in/hr.
29. Average annual rainfall for the Acampo area is 18.53 in/year; the 100-year return annual total rainfall is 33.36 in/year; evapotranspiration rates for the Lodi area are 65.15 in/year.
30. The facility is within the Lower Mokelumne Hydrologic Area (No. 531.20), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
31. The site is outside the 100-year flood zone.
32. Domestic wastewater is disposed of separately from the process winery wastewater in an on-site system. This system is regulated by the San Joaquin County Environmental Health Department.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

33. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to §13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.
34. Surface water drainage in the area is to the Mokelumne River, downstream of Camanche Reservoir.
35. The beneficial uses of the Mokelumne River from Camanche Reservoir to the Sacramento-San Joaquin Delta are agricultural supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
36. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
37. State Water Resources Control Board (State Board) Resolution No. 68-16 (the Antidegradation Policy) requires that the Regional Board, in regulating the discharge of waste, must maintain the

high quality of waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 also requires that waste discharged to high quality waters be required to meet waste discharge requirements, which will result in the best practicable treatment or control of the discharge.

38. The Discharger has not submitted any information showing that it should be allowed to degrade the groundwater as described in State Board Resolution No. 68-16, and therefore no degradation is allowed. This discharge of waste should not degrade surface water or groundwater quality. The waste will be treated and stored in lined ponds. This Order establishes effluent limitations that are protective of the beneficial uses of the underlying groundwater, requires a salinity source reduction study, and requires the sampling of groundwater monitoring wells to assure that the discharge of waste is not impacting the underlying groundwater. Based on the result of the scheduled tasks, this Order may be reopened to reconsider effluent limitations and other requirements to comply with Resolution 68-16.
39. Application of the winery wastewater to the land application area should not cause an increase in the salt (measured as specific conductivity, TDS, or chloride concentrations) in the underlying groundwater. The "total dissolved solids" component of the wastewater is composed of both Volatile Dissolved Solids (VDS) and Fixed Dissolved Solids (FDS). The proportion of VDS to FDS in wastewater varies with the source, but often 50-percent of the TDS in winery wastewater is in the volatile form. These volatile dissolved solids should be biologically treated in the pond or a well managed land application system and should not reach groundwater. Because the crops will take up some salt, the Discharger maintains that the proposed loading rate should not degrade the underlying groundwater. However, success is highly dependent on wastewater management and the blending of irrigation water. Accordingly, groundwater monitoring is appropriate to detect whether management of the land application area ensures that groundwater degradation does not occur.
40. Section 13267(b) of California Water Code provides that: *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

The technical reports required by this Order and the attached "Monitoring and Reporting Program No. ____" are necessary to assure compliance with these Waste Discharge Requirements (WDRs). The Discharger owns and operates the facility that generates the waste subject to this Order.

41. California Department of Water Resources sets standards for the construction and destruction of groundwater wells, is described in *California Well Standards Bulletin 74-90* (June 1991) and

Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC section 13801, apply to all monitoring wells.

42. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the wastewater treatment facility is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
43. Federal regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124). The State Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Discharger submitted a Notice of Non Applicability on 26 May 2006 for coverage under General Permit No. CAS000001.
44. On 11 August 2005, in accordance with the California Environmental Quality Act (Title 14, CCR, section 15261 et seq.), the San Joaquin County Planning Commission approved a Negative Declaration for the Lange Twins Winery Use Permit. Mitigation measures related to water quality are described below. Compliance with this Order's Prohibitions, Effluent Limitations, and Groundwater Limitations should mitigate the discharge and protect water quality. The following mitigation measures were identified in the CEQA document:

<u>Issue Identification</u>	<u>Environmental Issue</u>	<u>Mitigation Requirements</u>
Item 1.a Flood Zone	Flood Zone. Maps show that the 100-year flood zone area on this parcel is along Jahant Slough. The proposed winery will be located away from this area, and thus, any impact due to flooding would be less than significant.	The Discharge Specifications require no wastewater application when soil is saturated.
Item 1. c&d	The proposed project site is located outside of the open space buffer zone for riparian habitat and waterway protection of Jahant Slough. Any increase in stormwater drainage will be maintained on-site. Therefore, any impacts due to increases in surface drainage affecting erosion or sedimentation of Jahant Slough would be less than significant.	The Discharge Prohibitions prohibit any discharge of wastewater to surface water bodies.

45. The discharge of wastewater is exempt from the requirements of Title 27. The exemption, pursuant to Section 20090(b), is based on the following:
 - a. The Regional Board is issuing waste discharge requirements,
 - b. The discharge complies with the Basin Plan, and

- c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.
46. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

PUBLIC NOTICE

47. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.
48. The Discharger and interested agencies and persons were notified of the intent to prescribe WDRs for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
49. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that pursuant to Sections 13263 and 13267 of the California Water Code, Lange Twins Family Limited doing business as Jahant Woods Cellars, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Operation of a distillery at the facility is prohibited.
3. Bypass or overflow of untreated or partially treated waste is prohibited.
4. Discharge of waste classified as 'hazardous,' defined in Section 20164 of Title 27, CCR, or 'designated,' as defined in Section 13173 of the California Water Code, is prohibited.
5. The discharge of winery wastewater to the domestic wastewater system is prohibited.
6. The discharge of domestic waste to the process wastewater treatment system is prohibited.
7. Discharge of wastewater to other than the land application areas shown on Attachment C is prohibited.

B. Discharge Specifications:

1. The wastewater discharge shall not exceed 50,000 gallons per day (gpd) as a monthly average, except during crush season (September through November) when the limit shall be 60,000 gpd as a monthly average. The annual volume of wastewater discharged shall not exceed 12,500,000 gallons.
2. Neither the treatment nor the discharge shall cause a condition of nuisance or pollution as defined by the CWC, §13050.
3. The discharge shall not cause the degradation of any water supply.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
5. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.
6. As a means of discerning compliance with Discharge Specification No. 5, the dissolved oxygen content in the upper zone (one foot) of any wastewater treatment or storage pond shall not be less than 1.0 mg/L.
7. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
8. As described in Discharge Prohibition A.3, no wastewater shall be discharged with partial treatment. All winery wastewater must be treated in the wastewater pond prior to discharge to the cropland.
9. No wastewater treatment or storage pond shall have a pH of less than 6.5 or greater than 10.0.
10. All ponds shall be managed to prevent the breeding of mosquitoes. In particular,
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the waste surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
11. No physical connection shall exist between wastewater piping and any domestic water supply or other domestic/industrial supply well without an air gap or approved reduced pressure device.
12. The wastewater treatment and land application system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

13. The freeboard in all treatment and storage ponds shall never be less than two feet, as measured vertically from the water surface to the lowest point of overflow.
14. The wastewater treatment, storage, and land application system shall have sufficient capacity to accommodate wastewater flow and seasonal precipitation. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
15. On or about **15 October** each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 13 and No. 14.

C. Effluent Limitations:

1. Wastewater discharged from the storage pond to the Land Application Area shall not exceed the following monthly average effluent limits, or such concentrations as the Discharger determines necessary to ensure compliance with the Groundwater Limitations:

<u>Constituent</u>	<u>Units</u>	<u>Concentration</u>
BOD	mg/L	200
Total Dissolved Solids	mg/L	1,000
Total Nitrogen	mg/L	15

2. Wastewater discharged to the land application area shall not have a pH of less than 6.5 or greater than 10.0.

D. Land Application Area Requirements:

1. The discharge shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications and Effluent Limitations.
2. Wastewater shall not be applied to the land application area 24 hours before a predicted precipitation event, during precipitation, or within 24 hours after any precipitation event, nor shall it be applied when ground is saturated.
3. Crops shall be grown on the land application areas. Crops shall be selected based on nutrient uptake capacity, tolerance to high soil moisture conditions, and consumptive use of water and irrigation requirements. Cropping activities shall be sufficient to take up all the nitrogen applied.
4. Discharge of process wastewater, including runoff, spray or droplets from the irrigation system, shall not occur outside the boundaries of the land application area. The RWD described wastewater application using flood irrigation in the 28-acre land application area and drip application in the 40 and 64-acre land application areas. Other methods of wastewater application (spray, flood, or drip) are acceptable if the discharge complies with all requirements of this Order.

5. Livestock shall not be allowed to graze on the land application areas.
6. Hydraulic loading of process wastewater and irrigation water shall be at reasonable agronomic rates designed to maximize uptake and breakdown of waste constituents in the root zone and minimize the percolation of waste constituents below the root zone (i.e., deep percolation).
7. Wastewater conveyance lines shall be clearly marked as such. Process wastewater controllers, valves, etc. shall be affixed with reclaimed water warning signs, and these and quick couplers and sprinkler heads shall be of a type, or secured in such a manner, that permits operation by authorized personnel only.
8. Irrigation systems shall be labeled as containing reclaimed wastewater. If wastewater and irrigation water utilize the same pipeline, then backflow prevention devices shall be installed to protect the potable water supply.
9. Application of wastewater to the land application area using sprinkler irrigation is prohibited when wind velocities exceed 30 mph.
10. Public contact with wastewater shall be precluded through such means as fences, signs, and irrigation management practices. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of the land application areas to alert the public of the use of wastewater.
11. The land application areas shall be managed to prevent breeding of mosquitoes. In particular:
 - a. All irrigation water must infiltrate completely within 24 hours;
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation, and;
 - c. Low pressure pipelines, unpressurized pipelines, and ditches accessible to mosquitoes shall not be used to store wastewater.
12. A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigation used for process wastewater application.
13. A 50-foot buffer zone shall be maintained between any domestic or irrigation well and the wetted area produced during process wastewater application.
14. Discharges to land application areas shall be managed to minimize both erosion and runoff from the irrigated area.
15. A two-feet high berm shall be maintained around the perimeter of the 28-acre land application area to prevent wastewater/stormwater runoff from the land application area.
16. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile and shall not cause significant mobilization of soil constituents such as iron and manganese.

17. Application of wastewater to the land application areas via flood irrigation shall only occur on furrows graded so as to achieve uniform distribution, minimize ponding and provide for tailwater control. Furrow runs shall be no longer and slopes shall be no greater than what permits reasonably uniform infiltration and maximum practical irrigation efficiency. The minimum furrow slope shall not be less than 0.2 percent.
18. Wastewater application areas shall be allowed to dry for at least 72 hours from the end of wastewater application.
19. There shall be no standing water in the land application areas 24 hours after wastewater is applied, except during periods of heavy rains sustained over two or more consecutive days.

E. Solids/Sludge Disposal Requirements:

1. Collected screenings, sludge, and other solids removed from winery wastewater shall be disposed of in a manner that is consistent with Title 27, Division 2, Subdivision 1 of the CCR and approved by the Executive Officer.
2. Winery sludge and other solids shall be removed from the process equipment, sumps, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Winery solids drying operations, if any, shall be designed and operated to prevent leachate generation.
3. Storage and disposal of domestic wastewater sludge (septage) shall comply with existing Federal, State, and local laws and regulations, including permitting requirements and technical standards.
4. Sludge and other solids shall be removed from septic tanks as needed to ensure optimal operation and adequate hydraulic capacity. A duly authorized carrier shall haul sludge, septage, and domestic wastewater.
5. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations:

The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations greater than background water quality.

G. Provisions:

1. All of the following reports shall be submitted pursuant to §13267 of the CWC.
 - a. At least **30 days prior** to WWTF start-up, the Discharger shall submit an *As-Built Report* certifying WWTF construction. The as-built report shall address the treatment system, pumping stations, collection system, reclaimed water piping, treatment and

storage ponds, land application areas, and construction quality assurance testing to ensure pond liner integrity. The report shall identify and discuss any significant deviation from the system design as presented in the RWD.

- b. By **1 December 2006**, the Discharger shall submit and implement an *Operation and Management Plan (O&M Plan)* that addresses operation of the wastewater treatment and land application facility. At a minimum, the *O&M Plan* will describe (a) the daily operation and maintenance of the treatment system, (b) the practices used to treat the wastewater within limits specified in this Order, (c) define the land application area, and procedures used for the application of wastewater to these areas to prevent excessive BOD, nitrogen, and dissolved solids application loading rates, (d) the locations of flow and effluent sampling points, (e) quality control sampling procedures necessary to obtain representative samples, (f) maintenance of the land application areas, and (g) the locations of the solid waste disposal areas, methods of disposal, and the daily practices associated with the disposal of the solid waste. A copy of the *O&M Plan* shall be kept at the facility for reference by operating personnel and they shall be familiar with its contents.
- c. By **7 December 2007**, the Discharger shall submit and implement a workplan for a *Salinity Reduction Study*. The study shall look at all aspects of winery waste and shall investigate methods to reduce the concentration of dissolved solids in the wastewater. At a minimum, the salinity reduction report shall include a discussion of the winemaking chemicals, cleaning and sterilization procedures, vineyard practices, and salinity monitoring.
- d. By **7 December 2008**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the pond and land application areas. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), or equivalent, and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration. The report shall be prepared by or under the direction of an engineer or geologist registered to practice in California pursuant to California Business and Professions Code §6735, 7835, and 7835.1.

If the *Background Groundwater Quality Study Report* shows that the wastewater discharge has impacted, or is likely to impact groundwater quality, then upon request by the Executive Officer the Discharger shall submit *Groundwater Mitigation Plan* which shall evaluate contaminant control alternatives, describe a preferred alternative, and proposed a timeline to meet the Groundwater Limitations of this Order. The selected contaminant control alternative must comply with State Water Resources Control Board Resolution No. 68-16 and be consistent with the most recent Basin Plan.

2. The Discharger shall comply with the Monitoring and Reporting Program No. _____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
4. In the event of any change in control or ownership of the facility or wastewater disposal areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.
5. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
6. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to §313 of the "Emergency Planning and Community Right to Know Act of 1986."
7. If the Discharger can demonstrate to the satisfaction of the Executive Officer that higher nitrogen loadings than those specified in this Order will not cause or contribute to cause waste constituents to leach into and degrade underlying groundwater, or cause any other violation of the terms and conditions of this Order, then this Order may be reopened for consideration of revision of nitrogen loading limits. The demonstration shall include the submittal of a technical report that describes, at a minimum, the results of a field demonstration project conducted on similar soil types as those in the land application area(s) and using similar wastewater as that described in the Findings.
8. If the Discharger can demonstrate to the satisfaction of the Executive Officer that higher BOD loadings than those specified in this Order will not cause or contribute to cause waste constituents to leach into and degrade underlying groundwater, or cause any other violation of the terms and conditions of this Order, then this Order may be reopened for consideration of revision of BOD loading limits. The demonstration shall include the submittal of a technical report that describes, at a minimum, the results of a field demonstration project

conducted on similar soil types as those in the land application area(s) and using similar wastewater as that described in the Findings.

9. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.
10. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by this Order and by the Executive Officer pursuant to Section 13267 of the California Water Code. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
11. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
12. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer

TRO: 6/7/06